

I claim:

1. A method for protecting a marine propulsion system, comprising the steps of:

5 providing a source of electrical power;

causing a housing structure of said marine propulsion system to act as an anode in a galvanic circuit which comprises said housing structure, a metallic component, and water in which said housing structure and said metallic component are at least partially submerged.

10 2. The method of claim 1, further comprising:

inducing said metallic component to act as a cathode in said galvanic circuit.

3. The method of claim 1, wherein:

15 said metallic component is a propeller of said marine propulsion system.

4. The method of claim 1, wherein:

said causing step comprises the step of providing an electrically conductive coating on a surface of said housing structure which is submerged during operation  
20 of said marine propulsion system.

5. The method of claim 4, wherein:

said electrically conductive coating is made of a polymer material.

25 6. The method of claim 5, wherein:

said polymer material is a matrix in which an electrically conductive material is disposed.

7. The method of claim 6, wherein:

said electrically conductive material comprises graphite fibers.

5 8. The method of claim 4, further comprising:

disposing an electrically insulative layer between said housing structure and  
said electrically conductive coating.

9. The method of claim 1, further comprising:

10 impressing a current on said electrically conductive coating.

10. The method of claim 9, further comprising:

measuring a voltage at a preselected distance from said housing structure to  
determine the effectiveness of said causing step.

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11. The method of claim 10, further comprising:

intermittently ceasing said causing step as a function of said voltage to  
regulate said voltage to a predetermined range of magnitudes.

20 12. The method of claim 10, wherein:

said housing structure is at least partially submerged in saltwater; and  
chlorine gas is formed on an exposed surface of said housing structure.

13. The method of claim 10, wherein:

25 said housing structure is at least partially submerged in non-saltwater; and  
the local pH of said non-saltwater is decreased in the region immediately  
proximate an exposed surface of said housing structure.

14. A method for protecting a marine propulsion system, comprising the steps of:  
providing a housing structure for said marine propulsion system; and  
disposing an electrically conductive coating on at least a portion of the  
5 surface of a housing structure of said marine propulsion system, said electrically  
conductive coating being connectable in electrical communication with a source of  
electrical power.

15. The method of claim 14, further comprising:

10 providing a source of electrical power; and  
connecting said source of electrical power in electrical communication with  
said electrically conductive coating.

16. The method of claim 15, further comprising:

15 providing a metallic component; and  
causing said electrically conductive coating on said at least a portion of said  
housing structure to act as an anode in a galvanic circuit which comprises said  
electrically conductive coating, said metallic component, and water in which said  
electrically conductive coating and said metallic component are at least partially  
20 submerged.

17. The method of claim 15, further comprising:

providing a metallic component; and  
inducing an electron current to flow from said electrically conductive  
25 coating on said at least a portion of said housing structure to said source of  
electrical power in a galvanic circuit which comprises said electrically conductive

coating, said metallic component, and water in which said electrically conductive coating and said metallic component are at least partially submerged.

18. The method of claim 16, further comprising:

5 inducing said metallic component to act as a cathode in said galvanic circuit.

19. The method of claim 18, wherein:

said metallic component is a propeller of said marine propulsion system.

10 20. The method of claim 19, wherein:

said electrically conductive coating is made of a polymer material.

21. The method of claim 20, wherein:

15 said polymer material is a matrix in which an electrically conductive material is disposed.

22. The method of claim 21, wherein:

said electrically conductive material comprises graphite fibers.

20 23. The method of claim 21, further comprising:

disposing an electrically insulative layer between said housing structure and said electrically conductive coating.

24. The method of claim 21, further comprising:

25 impressing a current on said electrically conductive coating.

25. The method of claim 24, further comprising:

measuring a voltage at a preselected distance from said housing structure to determine the effectiveness of said causing step.

26. The method of claim 25, further comprising:

5 intermittently ceasing said causing step as a function of said voltage to regulate said voltage to a predetermined range of magnitudes.

27. The method of claim 25, wherein:

10 said housing structure is at least partially submerged in saltwater; and chlorine gas is formed on an exposed surface of said housing structure.

28. The method of claim 25, wherein:

15 said housing structure is at least partially submerged in non-saltwater; and the local pH of said non-saltwater is decreased in the region immediately proximate an exposed surface of said housing structure.

29. A method for protecting a marine propulsion system, comprising the steps of:

providing a housing structure for said marine propulsion system;  
disposing an electrically conductive coating on at least a portion of the  
20 surface of a housing structure of said marine propulsion system, said electrically conductive coating being connectable in electrical communication with a source of electrical power;

providing a source of electrical power; and  
connecting said source of electrical power in electrical communication with  
25 said electrically conductive coating.

30. The method of claim 29, further comprising:

providing a metallic component; and

causing said electrically conductive coating on said at least a portion of said housing structure to act as an anode in a galvanic circuit which comprises said electrically conductive coating, said metallic component, and water in which said electrically conductive coating and said metallic component are at least partially submerged.

31. The method of claim 30, further comprising:

inducing said metallic component to act as a cathode in said galvanic circuit.

32. The method of claim 31, wherein:

said metallic component is a propeller of said marine propulsion system.

33. The method of claim 32, wherein:

said electrically conductive coating is made of a polymer material which is a matrix in which an electrically conductive material is disposed.

34. The method of claim 33, further comprising:

disposing an electrically insulative layer between said housing structure and said electrically conductive coating.

35. The method of claim 34, further comprising:

impressing a current on said electrically conductive coating;

measuring a voltage at a preselected distance from said housing structure to determine the effectiveness of said causing step.

36. The method of claim 35, further comprising:

intermittently ceasing said causing step as a function of said voltage to regulate said voltage to a predetermined range of magnitudes.

37. The method of claim 36, wherein:

5        said housing structure is at least partially submerged in saltwater; and  
chlorine gas is formed on an exposed surface of said housing structure.